

High-Definition Multimedia Interface

Version 2.0

Quantum Data MOI v1.2a

Test ID: HF3-21

December 8, 2015

Preface

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Document Revision History

1.2a	December 8, 2015	Updated diagrams to reflect proper test setup, proper test equipment and to include additional test screens that appear throughout the test.
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Contact Information

The URL for the HDMI Forum web site is: <http://www.hdmiforum.org/>

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Introduction

This document provides a set of Method of Implementation for test method described in HDMI Compliance Test Specification Version 2.0 (HDMI CTS 2.0). HDMI Forum created HDMI CTS 2.0 to specify a set of tests that should be performed to verify features described in HDMI Specification Version 2.0a.

Scope

This document provides testing procedures for HDMI CTS 2.0 Test ID HF3-21: “Repeater Repeated Output Port HDR”. The procedure below deals with single resolution and only one Test ID is considered at a time.

References

Normative References

High-Definition Multimedia Interface Specification Version 1.4b, October 11, 2011.
HDMI Compliance Test Specification Version 1.4b, October 11, 2011.
High-Definition Multimedia Interface Specification Version 2.0a, March 19, 2015.
HDMI Compliance Test Specification Version 2.0,

Informative Reference

No additional informative references.

Test ID HF3-21: Repeater Repeated Output Port HDR

Objective

Confirm that the HDMI output of an A/V stream from an HDMI input is compliant.

This test is applied if the CDF field Repeater_HDR is “Y”.

An HDR Signal Generator is connected to a HDMI input of the DUT which may impact the behavior of the tested HDMI output. This test will be performed using the “Mini-CDF” form

Capability(s)

The Repeater DUT supports any HDR signal retransmission.

Table 9-13 Repeater Repeated Output Port - 6G – 2160p Generic Equipment

Item	Generic Equipment Reference	Qty.
1	HDR Signal Generator	1

Procedure

Setup:

- 1 Connect the HDR Signal Generator implemented for Test ID HF2-54 to the selected HDMI input and generate HDR signal.
- 2 Configure the Repeater DUT to retransmit the signal from the HDMI input to the tested HDMI output

Measure:

- 3 Perform Test ID HF1-53.

Vendor Specific Test Procedure

Test Equipment

A variety of equipment is needed for testing HDMI products. Each piece is authorized and included by name in this Compliance Test Specification. This section describes the Quantum Data test equipment.

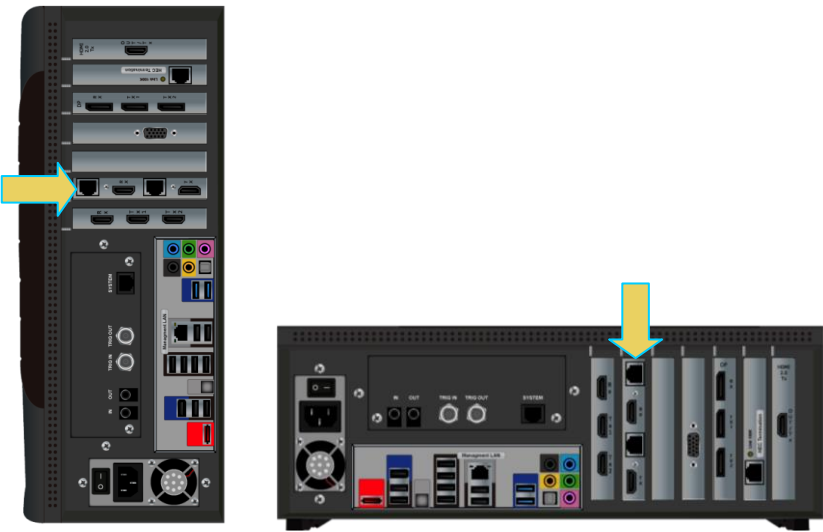
HDMI 2.0 Protocol Analyzer module

The Quantum Data 980 HDMI 1.4 Protocol Analyzer module can be installed in the 980B or 980R series Advanced Test Platforms. This 980 HDMI 1.4 Protocol Analyzer module serves the generic test functions called out in the HDMI 2.0 Generic CTS. Refer to the table below:

Item	Quantum Data Equipment	
1	980 Advanced Test Platform series:	
	Equipped with:	980 HDMI 1.4 Protocol Analyzer module
		HDMI CTS 2.0 Compliance Test Package #1 or #3

980 HDMI 1.4 Protocol Analyzer Module with 980 Series Platform Configurations

The figures below show depictions of the 980 HDMI 1.4 Protocol Analyzer module equipped in various 980 series platforms. **Note:** Card positioning may vary depending on configuration.



Source Dynamic Range and Mastering InfoFrame – High Dynamic Range

Test ID HF1-53: Source Dynamic Range and Mastering InfoFrame – High Dynamic Range

1. Objective

Confirm that the Source DUT sends the Dynamic Range and Mastering InfoFrame when it is sending HDR content.

2. Test Overview

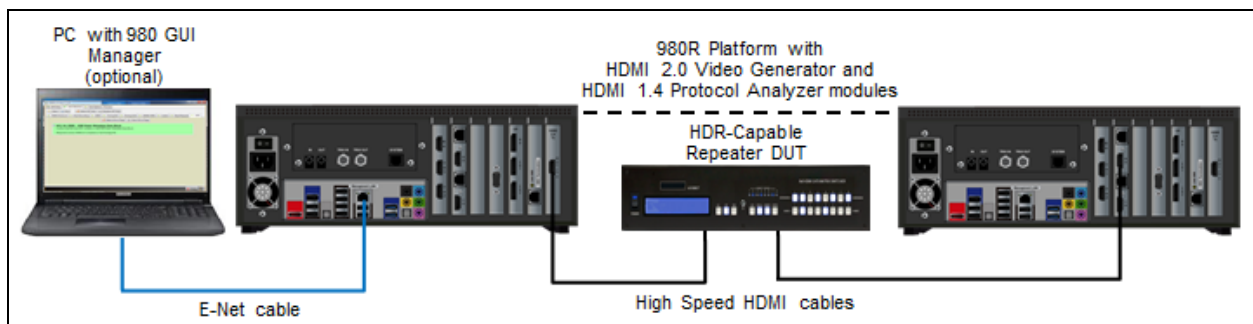
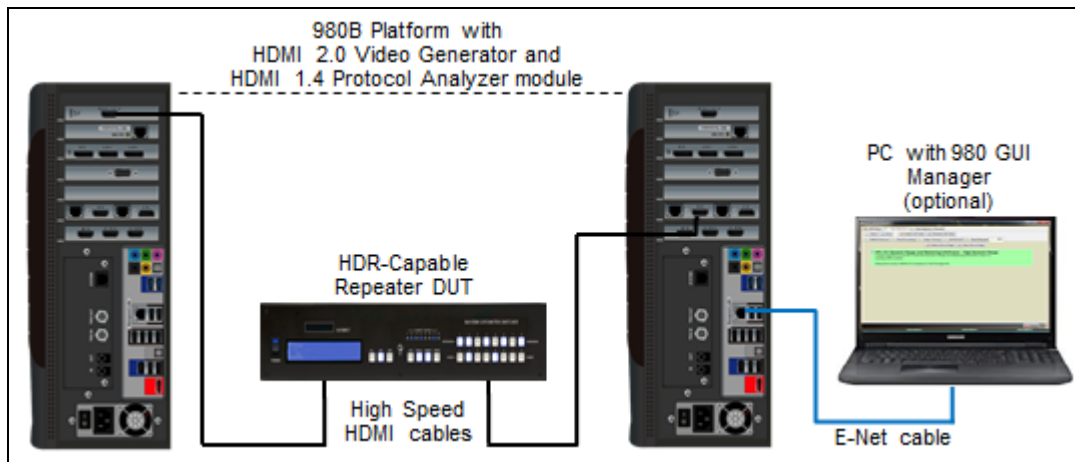
The Pass/Fail criteria is assessed by the application with no human examination required.

3. Procedure

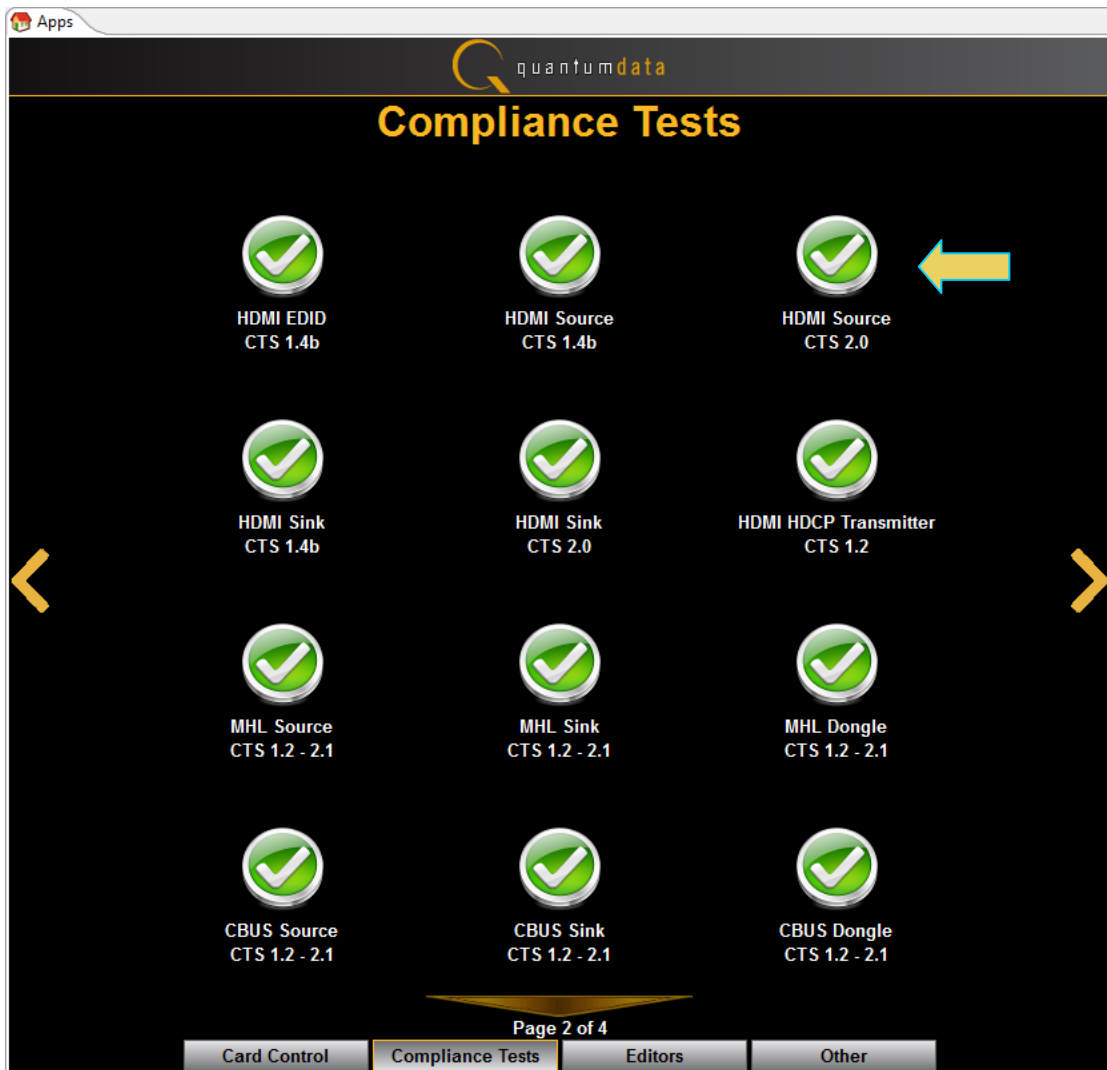
Use the following procedure to conduct this test.

- 1 Connect the HDR Signal Generator (Quantum Data HDM 2.0 Video Generator module) to the HDR Repeater DUT input.
- 2 Connect the HDR Repeater DUT output to the Quantum Data 980 HDMI 1.4 Protocol Analyzer at the module's port labeled Rx as shown below. Use a High Speed HDMI cable. The figures below depict these connections to the modules in the 980 series chassis.

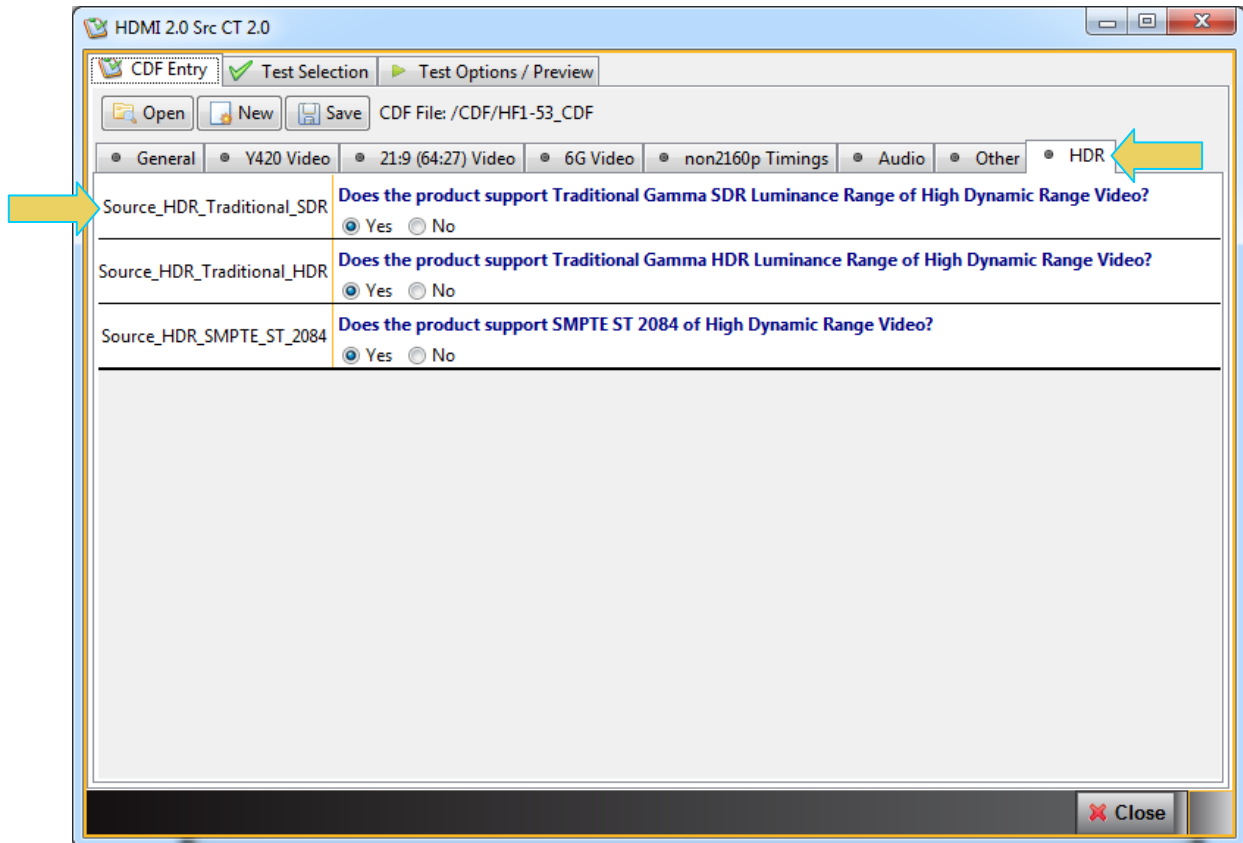
Note: Two 980 platforms are depicted in both diagrams below. Please note that only a single 980 Platform is required. Both modules reside in the same 980 Platform.



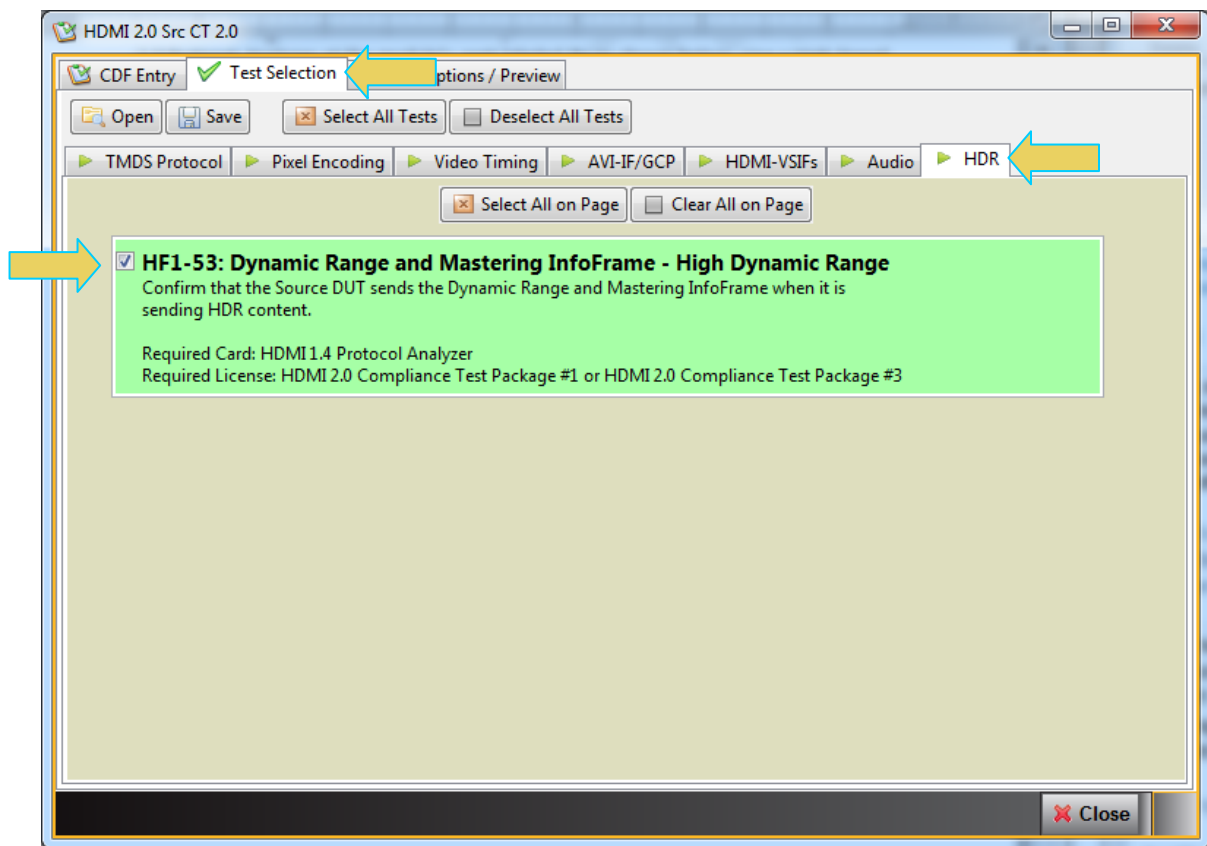
- 3 Establish a session between the Quantum Data 980 Embedded Manager GUI (touchscreen) running on a host PC.
- 4 Complete the following steps:
 - 4.1 Click on the HDMI Source CTS 2.0 icon in the Compliance Tests page of the Apps panel.



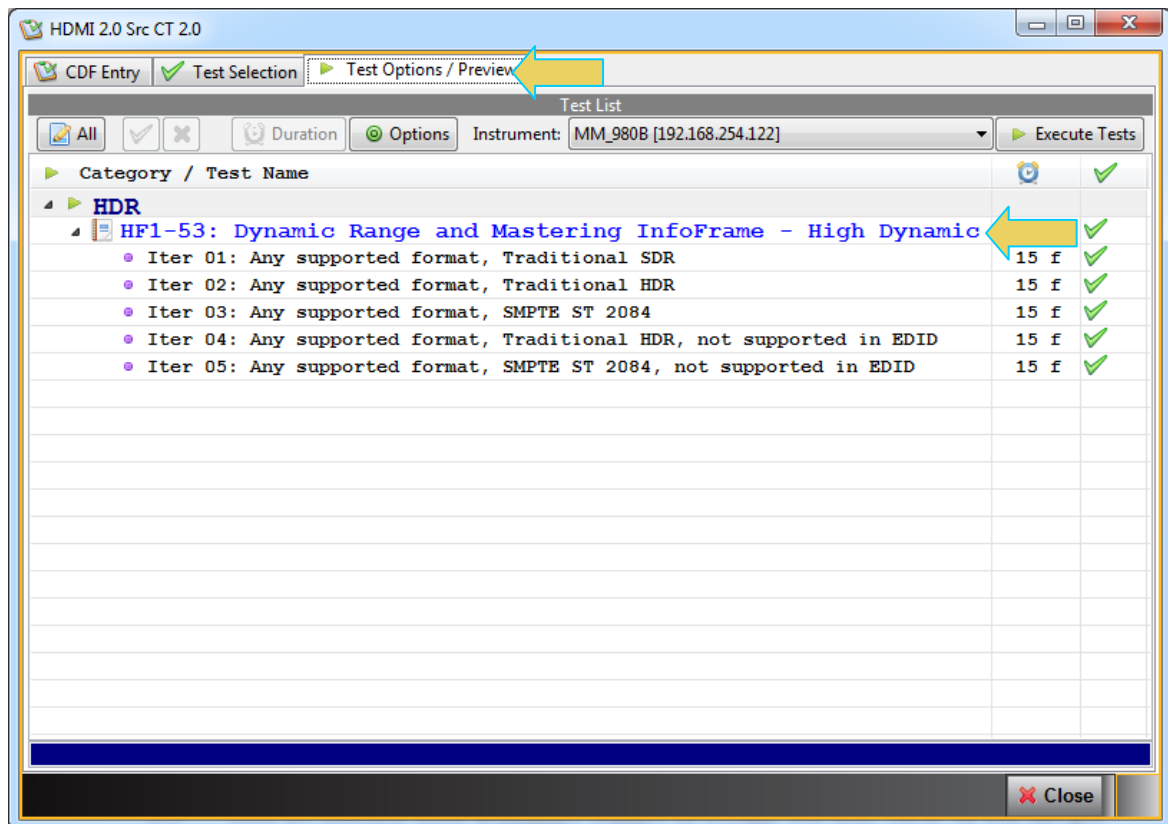
- 4.2 Navigate to the CDF tab if not already there. If there is a saved CDF file, then click on Open and select it. Otherwise, enter the DUT's CDF information for each tab and optionally click on Save to save the CDF. Select the items in the HDR tab that apply to the device under test.



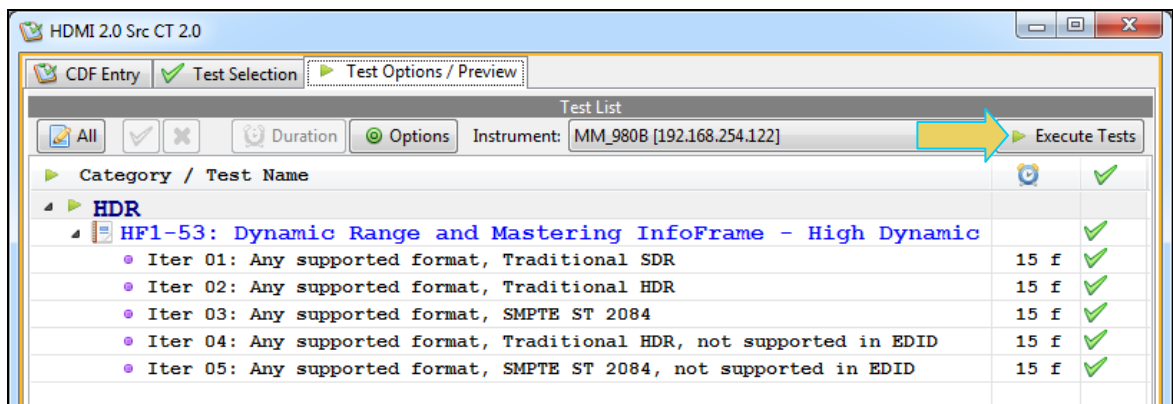
- 4.3 Click on the Test Selection tab and the HDR sub tab and select the Test ID HF1-53: Source Dynamic Range and Mastering InfoFrame – High Dynamic Range Test. Refer to the sample screen below.



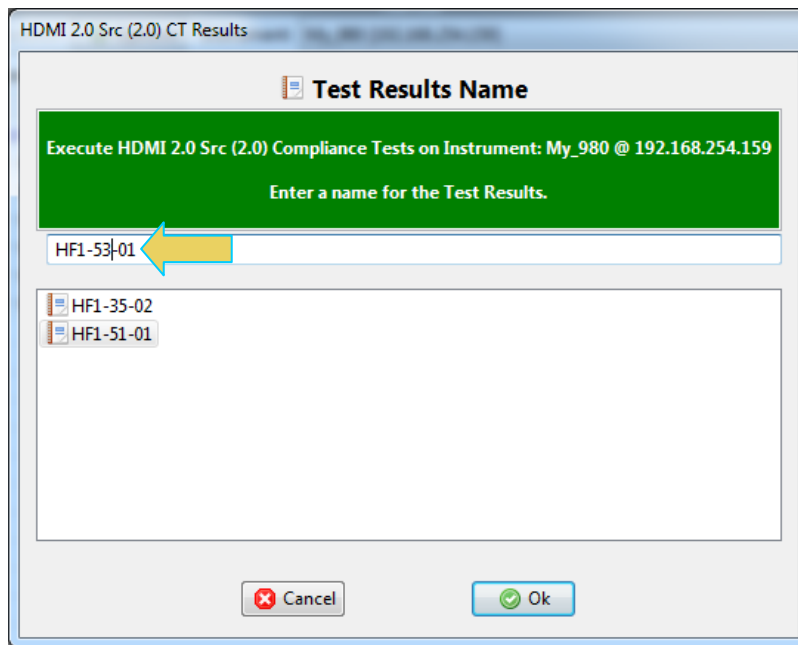
- 4.4 Click on Test Options / Preview tab and review the list of tests. Refer to the sample screen below.



4.5 Click on Execute tests activation button to initiate the test. Refer to the sample screen below.

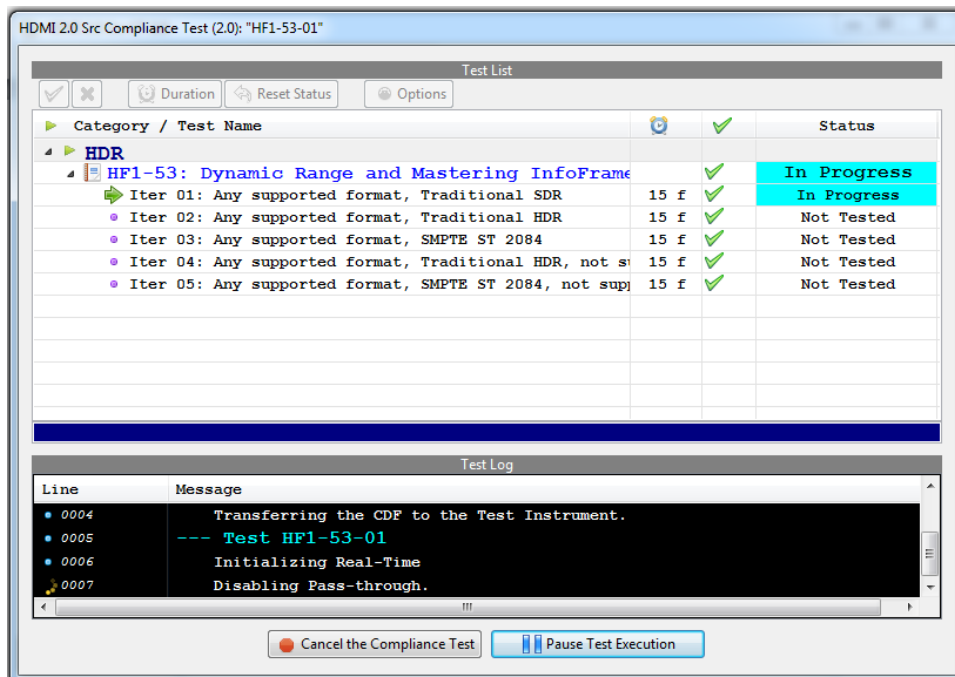


Note: You will be prompted with a dialog box to assign a name to the test results. Refer to the screen example below:

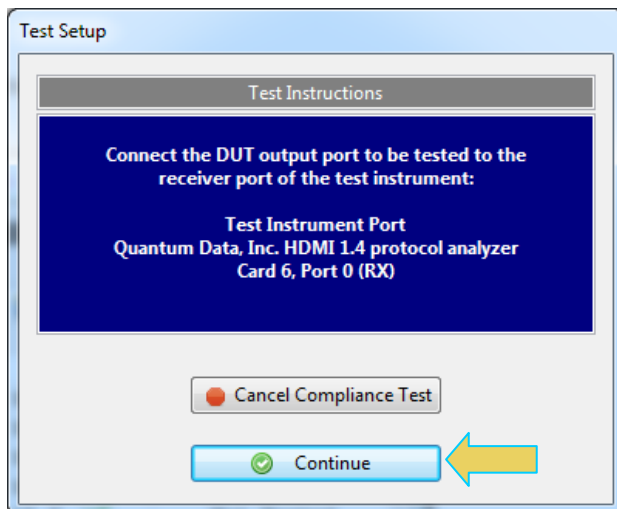


Enter a name, click OK and the test will begin.

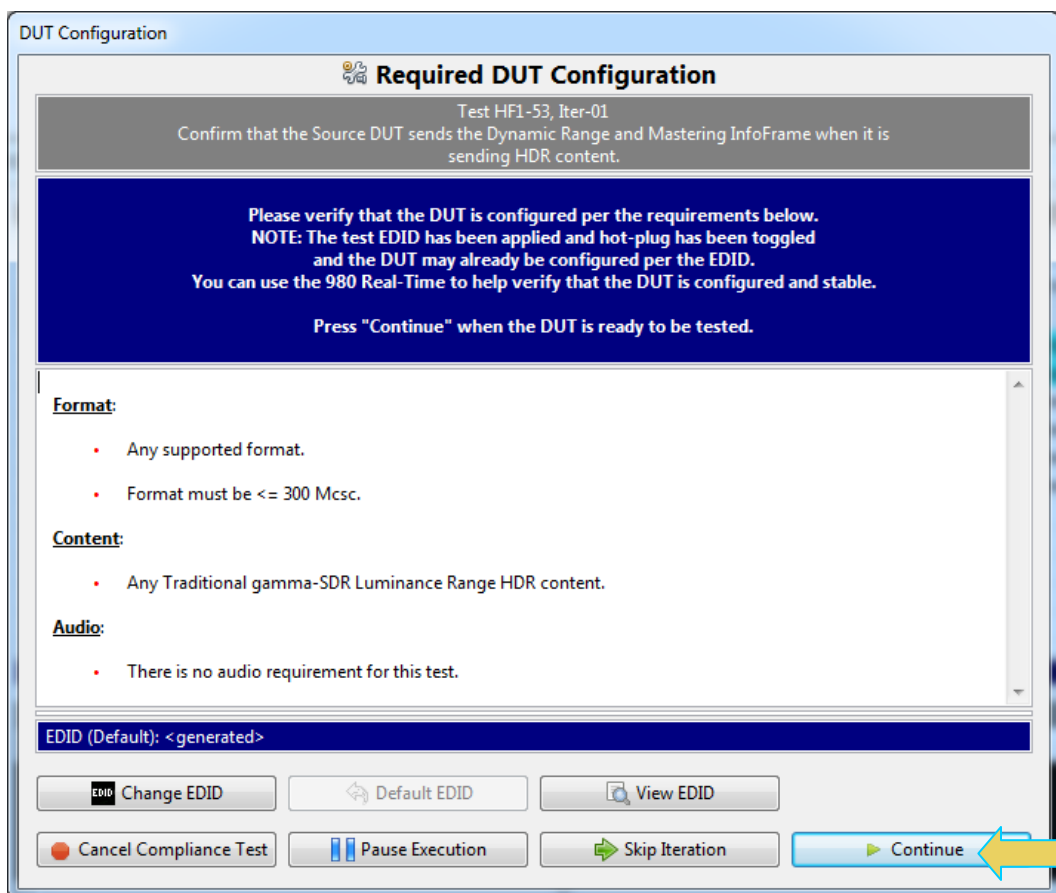
A Test Window will appear (below) indicating the progress of the test.



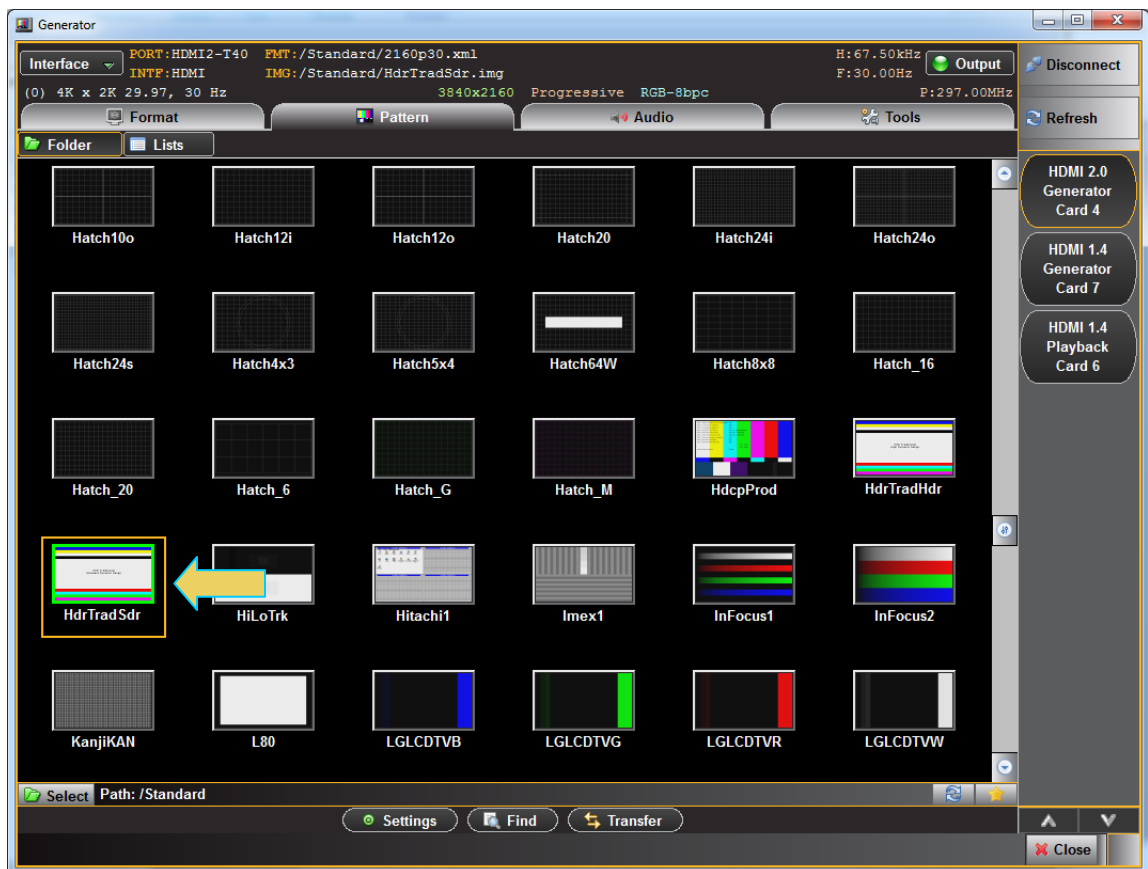
You will be prompted with a dialog box (below) instructing you to connect the DUT to the test equipment. Press Continue to run the test.



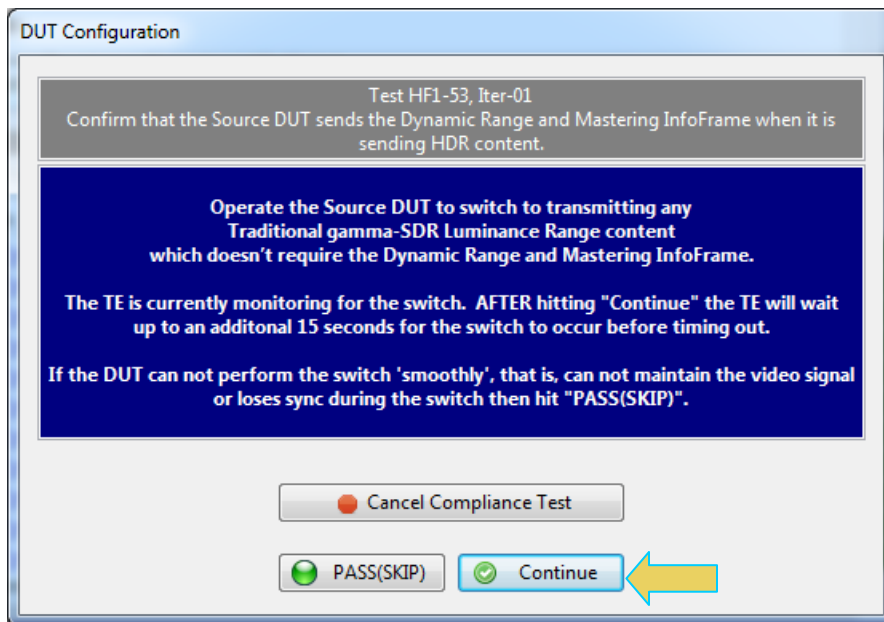
You will then be prompted with a series of dialog boxes informing you of the requirements of the source DUT for each distinct sub test. Verify that the source is outputting the required HDMI content and press Continue to run the test.



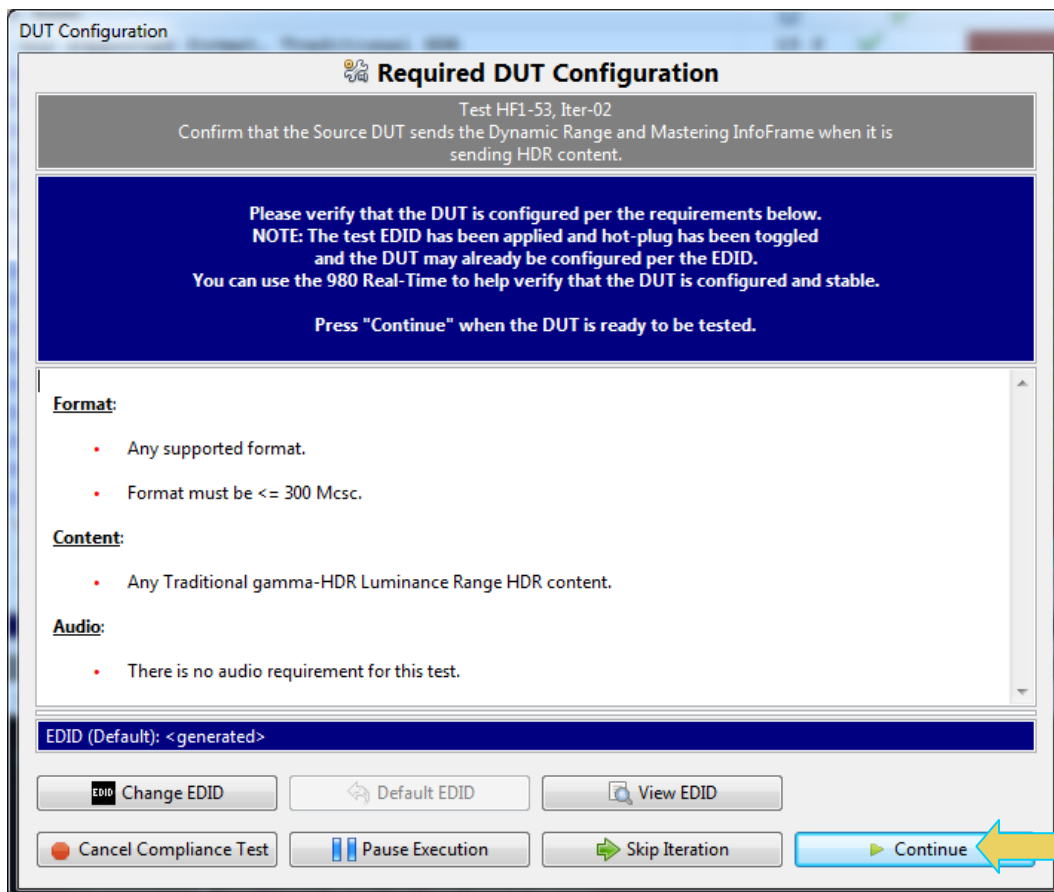
- 5 Use the Embedded 980 GUI Manager to select the format and test image from the 980 HDMI 2.0 Video Generator module. Refer to the screen example below to select the proper test image.



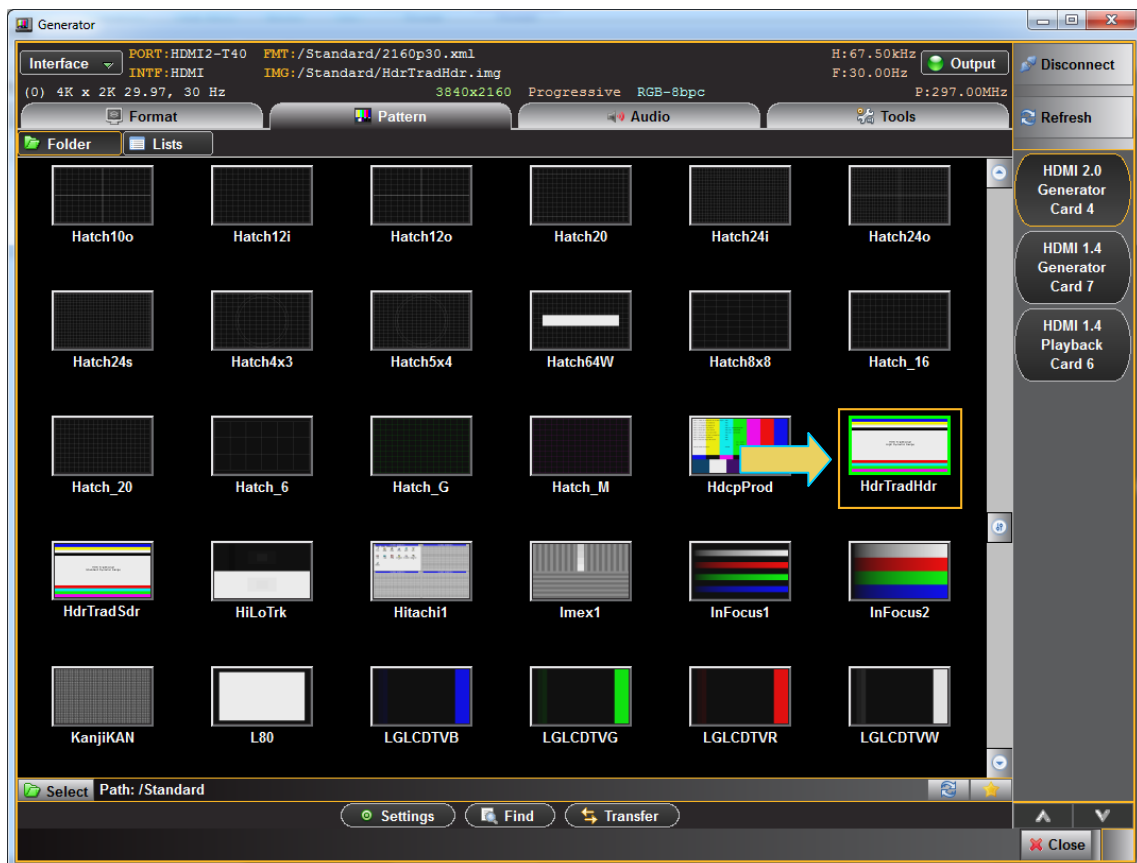
A DUT Configuration dialog box will appear. Follow the instructions on the dialog box and press either PASS/(SKIP) or Continue depending on the capabilities of the DUT.



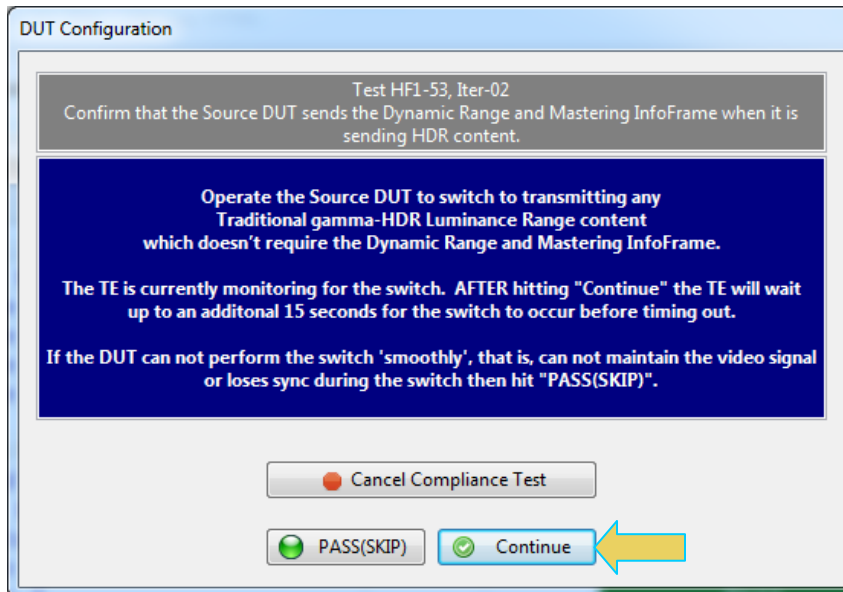
Another DUT Configuration dialog box will appear instructing you to configure the DUT to output a specific HDR content. Press Continue when the DUT is outputting the proper content.



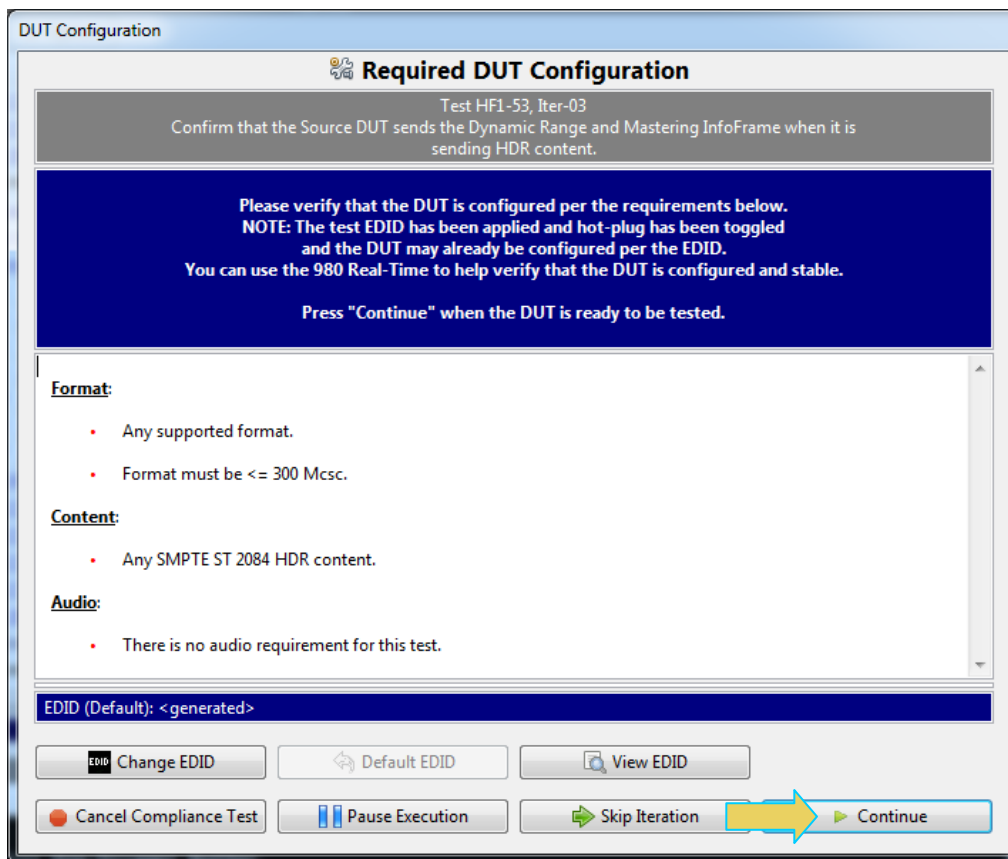
Use the Embedded 980 GUI Manager to select the format and test image from the 980 HDMI 2.0 Video Generator module. Refer to the screen example below to select the proper test image.



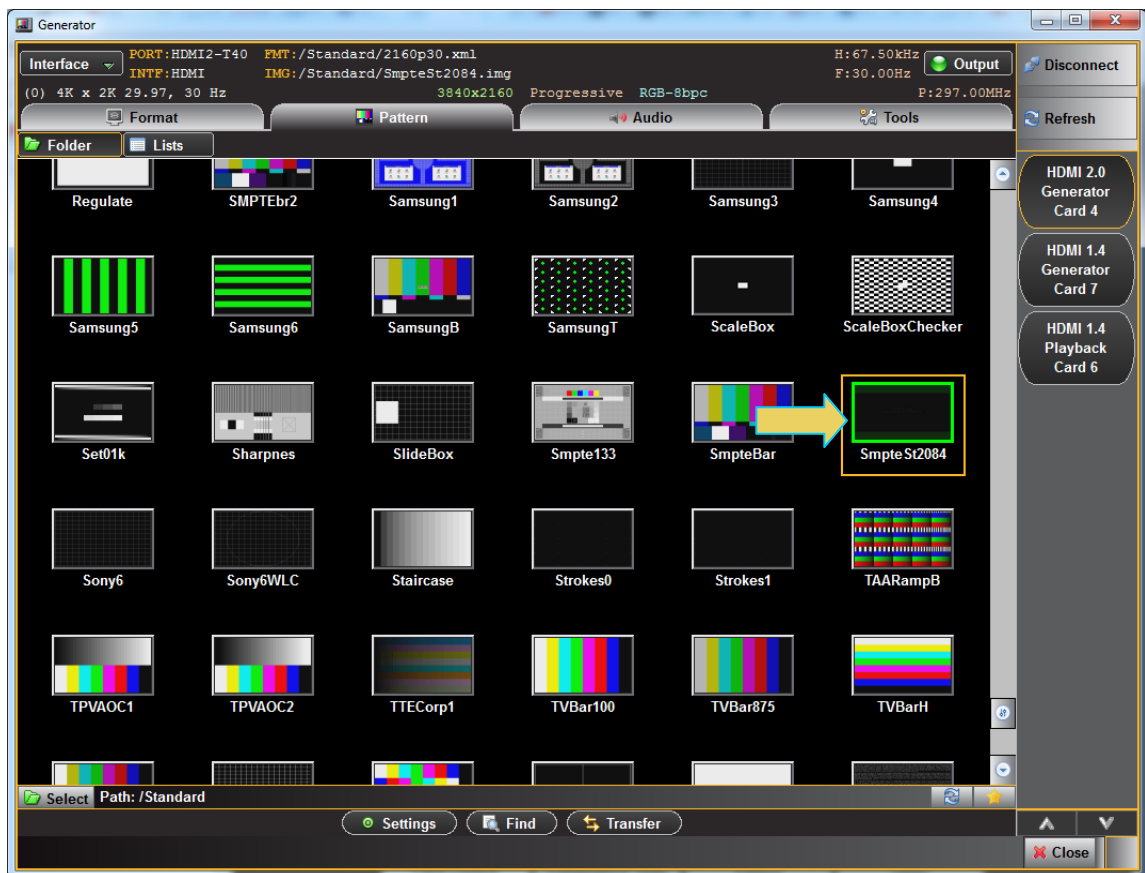
A DUT Configuration dialog box will appear. Follow the instructions on the dialog box and press either PASS/(SKIP) or Continue depending on the capabilities of the DUT.



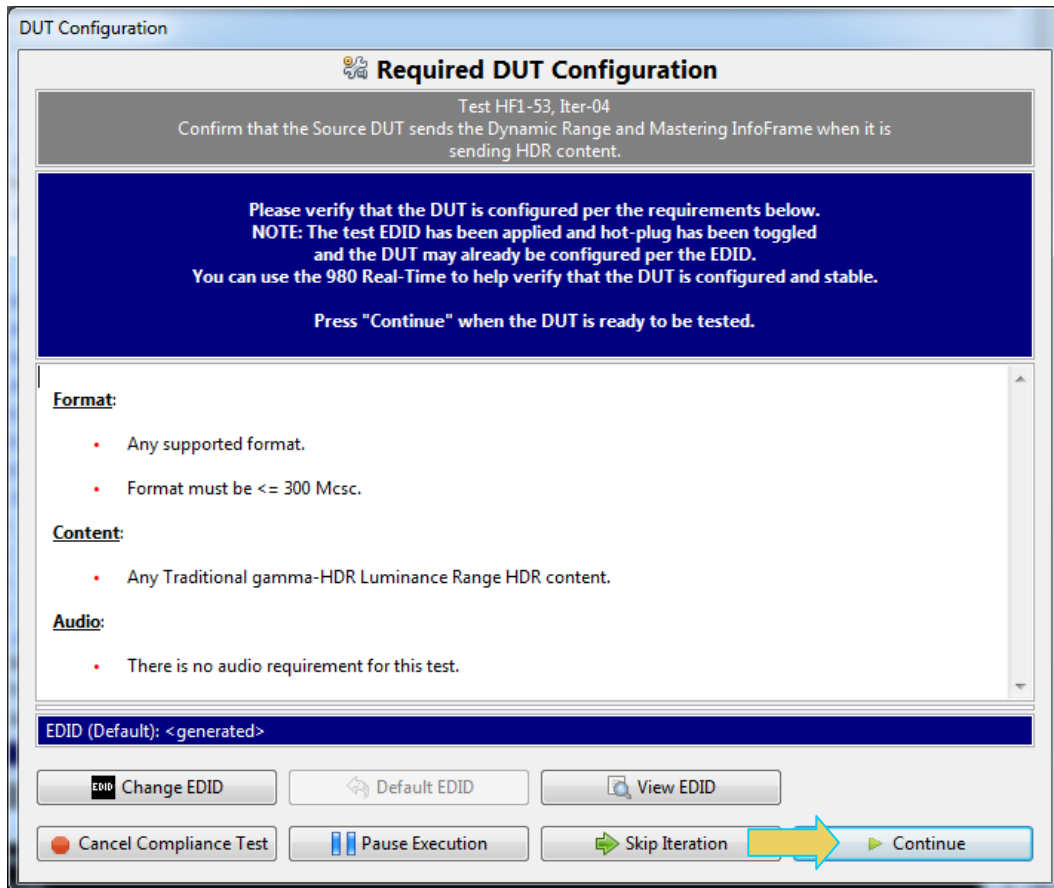
Another DUT Configuration dialog box will appear instructing you to configure the DUT to output a specific test pattern.



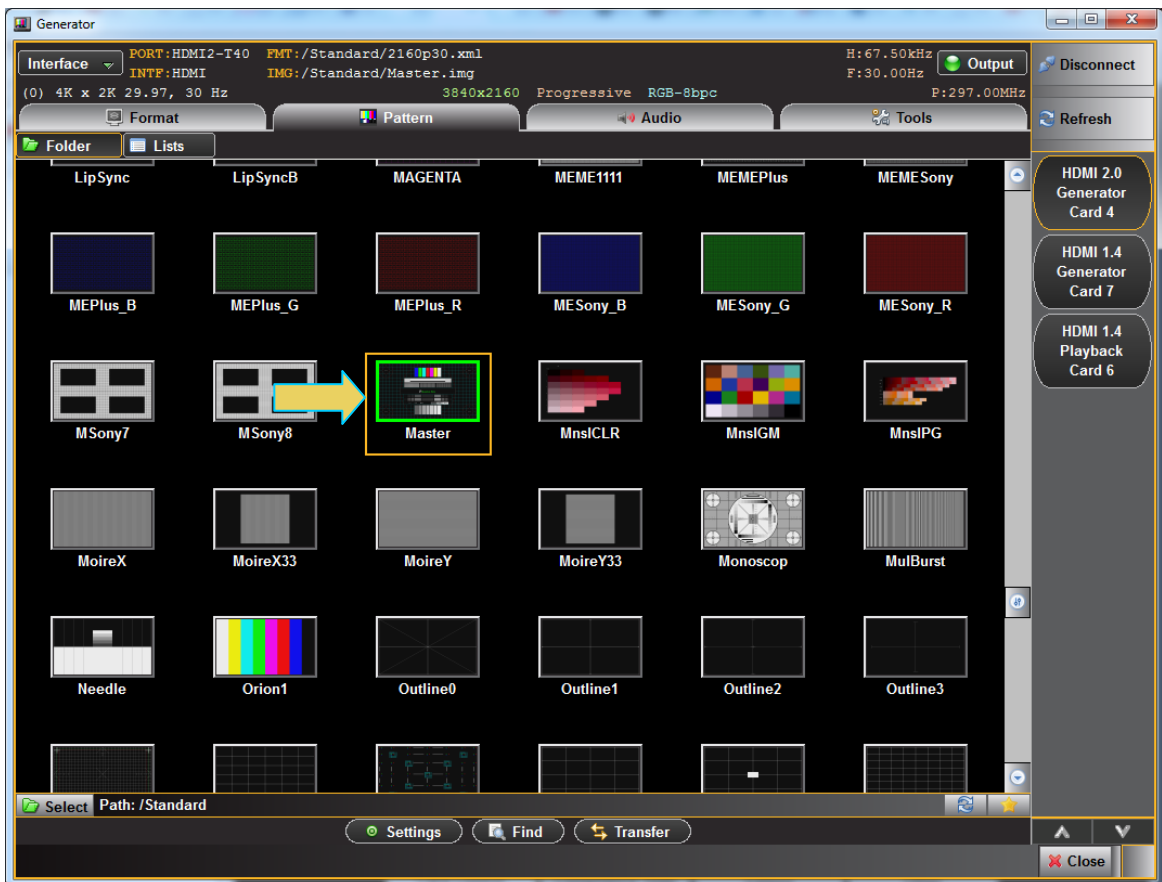
Use the Embedded 980 GUI Manager to select the format and test image from the 980 HDMI 2.0 Video Generator module. Refer to the screen example below to select the proper test image.



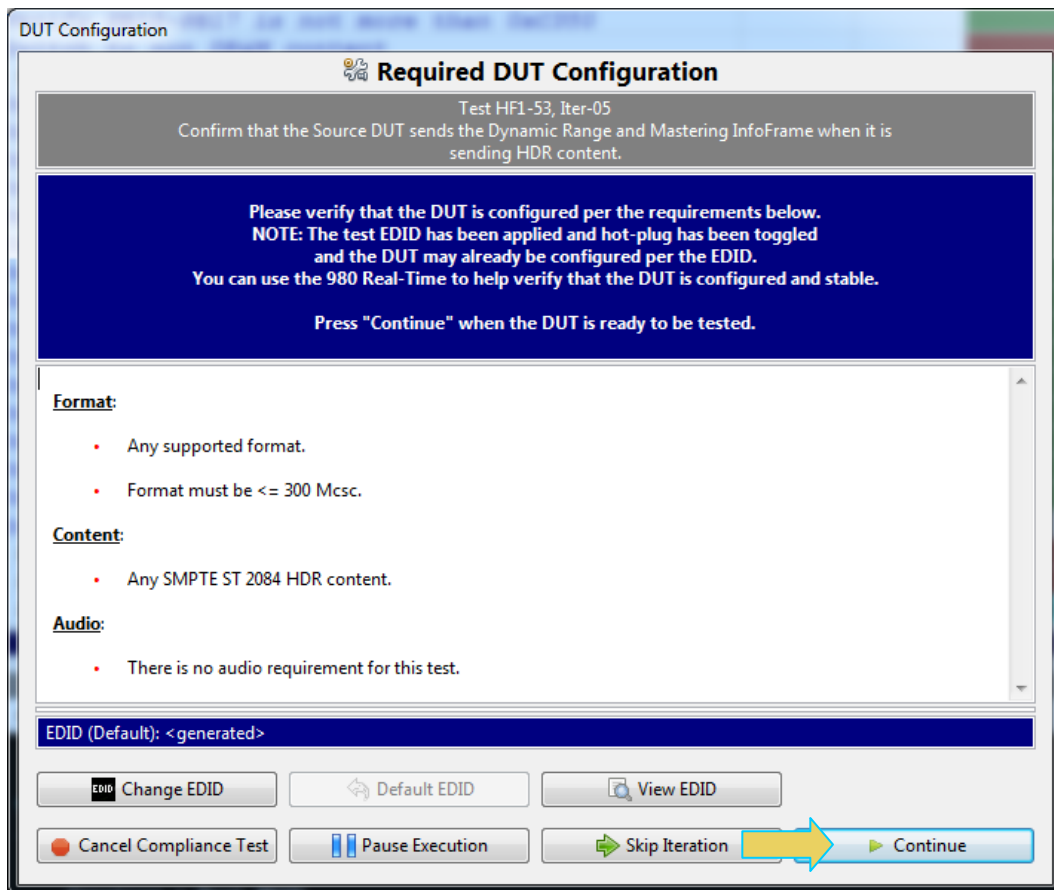
Another DUT Configuration dialog box will appear instructing you to configure the DUT to output a specific HDR content. Press Continue when the DUT is outputting the proper content.



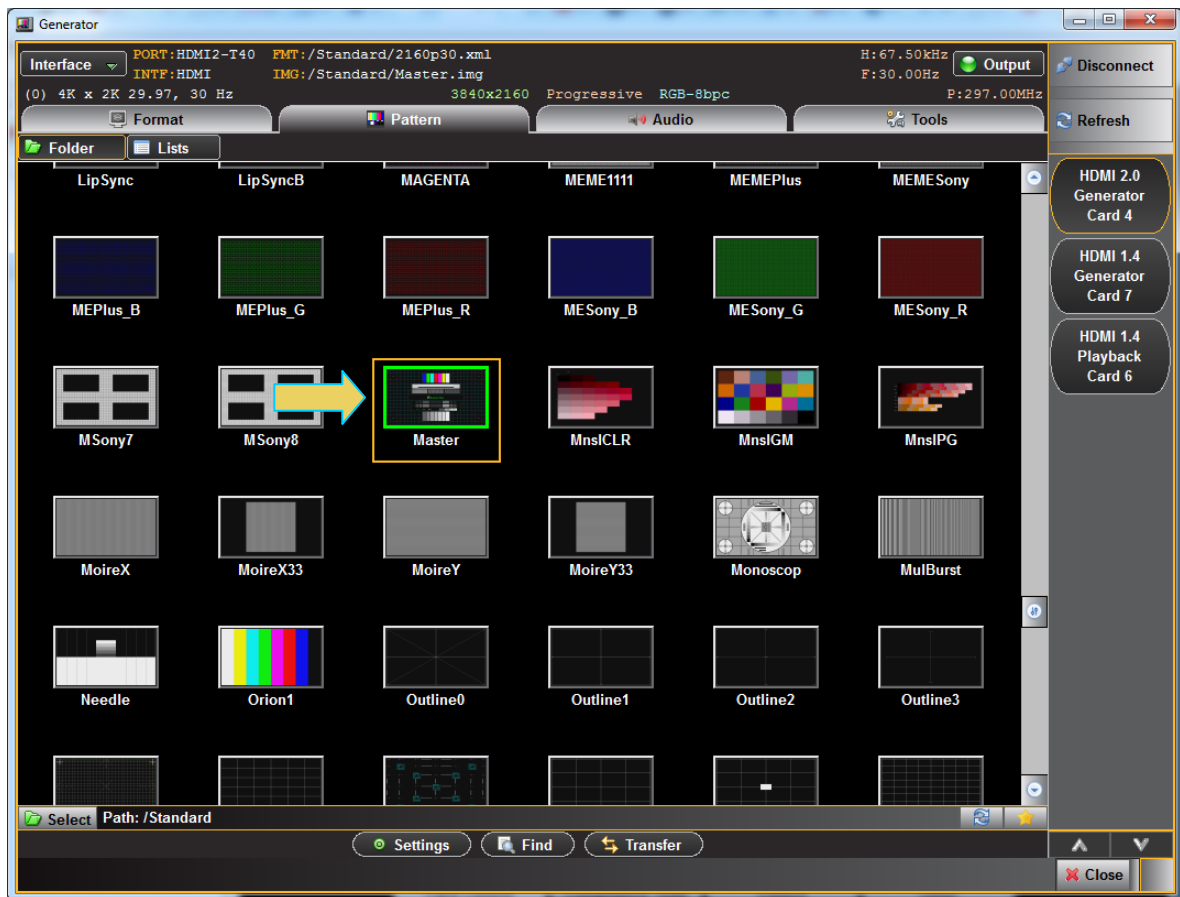
Use the Embedded 980 GUI Manager to select the format and test image from the 980 HDMI 2.0 Video Generator module. Refer to the screen example below to select the proper test image.



Another DUT Configuration dialog box will appear instructing you to configure the DUT to output a specific HDR content. Press Continue when the DUT is outputting the proper content.



Use the Embedded 980 GUI Manager to select the format and test image from the 980 HDMI 2.0 Video Generator module. Refer to the screen example below to select the proper test image.



- 6 If the 980 HDMI 1.4 Protocol Analyzer's compliance test application reports PASS, then PASS. If the 980 HDMI 2.0 Protocol Analyzer's compliance test application reports FAIL, then FAIL.

